

CLAIMS

What is claimed is:

1. A capacitor structure, comprising:

a bottom plate and a top plate, said top plate having a perimeter;

a dielectric layer in between said bottom plate and said top plate; and

at least one insulating sidewall spacer placed against said perimeter of said top plate and overlaying a portion of said dielectric layer.

1 2. The capacitor structure of Claim 1, and further
2 comprising:

3 a substrate underlying said bottom plate; and

4 a conductor embedded in said substrate and
5 underlying said bottom plate.

1 3. The capacitor structure of Claim 2, wherein said
2 conductor comprises copper damascene.

1 4. The capacitor structure of Claim 3, said bottom plate
2 further comprising a conductive barrier layer in contact
3 with said conductor.

1 5. The capacitor structure of Claim 1, wherein each of
2 said bottom plate and said top plate comprises a metal
3 plate.

1 6. The capacitor structure of Claim 1, wherein said
2 dielectric layer comprises silicon dioxide.

1 7. The capacitor structure of Claim 1, and further
2 comprising an insulating cap overlaying said top plate.

1 8. The capacitor structure of Claim 7, wherein said
2 insulating cap has a corresponding perimeter to said top
3 plate, and wherein said at least one insulating sidewall
4 spacer is placed against said perimeter of said insulating
5 cap.

1 9. A method of fabricating a capacitor structure, said
2 method comprising:

3 forming a bottom plate;

4 forming a dielectric layer overlaying the bottom
5 plate;

6 forming a top plate over the dielectric layer,
7 said top plate having a perimeter;

8 forming at least one insulating sidewall spacer
9 placed against said perimeter of said top plate and
10 overlaying a portion of said dielectric layer.

1 10. The method of Claim 9, and further comprising:

2 prior to forming said at least one insulating
3 sidewall spacer, etching said top plate to expose said
4 dielectric at said perimeter of said top plate.

1 11. The method of Claim 9, wherein:

2 said method further comprises forming a conductor
3 embedded in a substrate; and

4 forming the bottom plate comprises forming the
5 bottom plate overlaying the conductor.

1 12. The method of Claim 11, wherein forming a conductor
2 comprises forming a copper damascene structure.

1 13. The method of Claim 11, wherein forming said bottom
2 plate comprises forming a conductive barrier layer in
3 contact with said conductor.

1 14. The method of Claim 9, wherein each of said steps of
2 forming a bottom plate and forming a top plate comprises
3 forming a metal plate.

1 15. The method of Claim 9, wherein forming the dielectric
2 layer comprises forming a silicon dioxide layer.

1 16. The method of Claim 9, and further comprising forming
2 an insulating cap overlaying said top plate.

1 17. The method of Claim 16, wherein said insulating cap
2 has a corresponding perimeter to said top plate, and
3 wherein forming said at least one insulating sidewall
4 spacer comprising forming said at least one insulating
5 sidewall spacer against said perimeter of said insulating
6 cap.